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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,038	01/02/2002	Abhishek Ranjan Singh	P12693-US2/50001.2063	8610
27045	7590	03/31/2006	EXAMINER	
ERICSSON INC. 6300 LEGACY DRIVE M/S EVR C11 PLANO, TX 75024			JUNG, MIN	
			ART UNIT	PAPER NUMBER
			2616	

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/033,038

Applicant(s)

SINGH ET AL.

Examiner

Min Jung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Throughout the claims, the meaning of "cost" is unclear and/or inconsistent. For example, in claim 1, it seems that the "cost" is used as 'the cost for lookup architecture construction', whereas in claim 2, the same term seems to imply 'the cost of (the existence of) all possible architecture, and in claims 8-12, the same term seems to mean 'the cost for performing route lookup'.

In claims 12 and 27, it is not clear what are being summed; is it the "value" and the "costs"? It is also not clear what are "values based on a height". Further, it is not clear what "height" is; is a "tree" implied in this concept of height? What kind of values are the "values based on a height"? Further, the sentence is tangled, therefore, further obscuring the meaning.

In claim 16, lines 6-7, it seems that "the number accesses" should be changed to "the number of accesses".

In claim 30, lines 11-12, the passage following "wherein" is not consistent with the standard usage of "wherein"; if "places" was used as the verb for the clause, then the term "that" should be omitted.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-11, 13-26, and 28-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Ji et al., US PG Pub. 2002/0172203 (Ji).

Ji discloses fast IP lookup with 16/K and 16/Kc compressed data structure.

Regarding claims 1-3 of present invention, Ji teaches a data network with router having memory for storing entries for a plurality of destinations from the router, a method of performing route lookup that places a bound on the number of accesses to the memory (see Abstract and [0048]-[0054]), the method comprising the steps of : determining the cost of all possible lookup architecture that can be constructed given the distribution of destinations in the data network (it is inherent in the teaching that the data structure includes the information regarding the cost of each route, see [0015]); choosing a lookup architecture which requires the minimum amount of memory to

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obtain the next hop of any destination and that places a bound on the number of memory accesses to obtain the next hop (16/K scheme requires less than 2MB memory to store the whole routing tables, and a 16/Kc version utilizes bitmaps to compress the table to less than 0.5 MB, and that places a bound of 2 memory accesses or 3 memory accesses, see Abstract); and after receipt of a data packet, using the chosen lookup architecture to lookup a route for a destination address associated with the data packet ([0054] and [0074]).

Regarding claims 4 and 5, Ji teaches all possible lookup trees including a radix tree ([0012] and [0015]).

Regarding claims 6 and 7, Ji teaches storing the destination associated with data packets as IP addresses ([0029]).

Regarding claims 8-11, Ji teaches that the cost of route lookup is the two memory accesses and the three memory accesses, with the minimum cost associated with performing the route lookup being the two memory accesses, and the cost associated with performing the route lookup being based on the memory being 2MB or 0.5 MB (Abstract), and the cost associated with performing the route lookup being calculated based on a length of a destination address for the data packet ([0028] and [0029]).

Regarding 13-15, Ji teaches that optimum value associated with performing the route lookup is a cost associated with minimum memory usage in performing the route lookup (two or less accesses for 2MB scheme and three or less accesses for 0.5 MB scheme, [0015]).

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Claims 16-26 and 28-33 recite the similar aspects of the invention recited in the claims 1-11, and 13-15, which are rejected as addressed above. Therefore, the same reasoning applies to this group of claims.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Ji et al. patent, the Crescenzi et al. patent, the Kastenholz patent, the Ferguson et al. patent, the Seid patent, and the Mann et al. patent, are cited for further references.

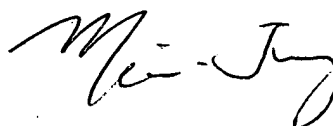
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Min Jung whose telephone number is 571-272-3127. The examiner can normally be reached on Monday through Friday 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJ  
March 28, 2006

A handwritten signature in cursive script, appearing to read "Min Jung".

Min Jung  
Primary Examiner